Mathematics Objectives: Years 4 & 5

Objective A: Knowing and Understanding

At the end of year 5, students should be able to:

(i) select appropriate mathematics when solving problems in both familiar and unfamiliar situations
(ii) apply the selected mathematics successfully when solving problems
(iii) solve problems correctly in a variety of contexts.

Objective B: Investigating Patterns

At the end of year 5, students should be able to:

(i) select and apply mathematical problem-solving techniques to discover complex patterns
(ii) describe patterns as general rules consistent with findings
(iii) prove, or verify and justify, general rules.

Objective C: Communicating

At the end of year 5, students should be able to:

(i) use appropriate mathematical language (notation, symbols and terminology) in both oral and written explanations
(ii) use appropriate forms of mathematical representation to present information
(iii) move between different forms of mathematical representation
(iv) communicate complete, coherent and concise mathematical lines of reasoning
(v) organize information using a logical structure.

Objective D: Applying mathematics in real-life contexts

At the end of year 5, students should be able to:

(i) identify relevant elements of authentic real-life situations
(ii) select appropriate mathematical strategies when solving authentic real-life situations
(iii) apply the selected mathematical strategies successfully to reach a solution
(iv) justify the degree of accuracy of a solution
(v) justify whether a solution makes sense in the context of the authentic real-life situation.

Mathematics Assessment Criteria: Years 4 & 5

Criterion A: Knowing and Understanding

Maximum: 8

Achievement level	Level descriptor
0	The student **does not** reach a standard described by any of the descriptors below.
1 – 2	The student: i. select appropriate mathematics when solving **simple problems** in **familiar situations** ii. apply the selected mathematics successfully when solving these problems iii. generally solve these problems correctly in a variety of contexts.
3 – 4	The student: i. select appropriate mathematics when solving **more complex problems** in **familiar situations** ii. apply the selected mathematics successfully when solving these problems iii. generally solve these problems correctly in a variety of contexts.
5 – 6	The student: i. select appropriate mathematics when solving **challenging problems** in **familiar situations** ii. apply the selected mathematics successfully when solving these problems iii. generally solve these problems correctly in a variety of contexts.
7 – 8	The student: i. select appropriate mathematics when solving **challenging problems** in both **familiar and unfamiliar situations** ii. apply the selected mathematics successfully when solving these problems iii. generally solve these problems correctly in a variety of contexts.

Mathematics Assessment Criteria: Years 4 & 5

Criterion B: Investigating Patterns

Maximum: 8

Achievement level	Level descriptor
0	The student **does not** reach a standard described by any of the descriptors below.
1 – 2	The student: i. **apply, with teacher support**, mathematical problem-solving techniques to discover **simple patterns** ii. **state predictions** consistent with simple patterns iii. (*not demonstrated at this level*).
3 – 4	The student: i. **apply** mathematical problem-solving techniques to recognize **simple patterns** ii. **suggest general rules** consistent with **findings** iii. (*not demonstrated at this level*).
5 – 6	The student: i. **Select** and **apply** mathematical problem-solving techniques to discover **complex patterns** ii. **describe patterns** as general rules consistent with **findings** iii. **verify** the validity of these general rules.
7 – 8	The student: i. **select** and **apply** mathematical problem-solving techniques to recognize **complex patterns** ii. **describe patterns** as general rules consistent with **correct findings** iii. **prove**, or **verify** and **justify**, these general rules.

Mathematics Assessment Criteria: Years 4 & 5

Criterion C: Communicating

Maximum: 8

Achievement level	Level descriptor
0	The student **does not** reach a standard described by any of the descriptors below.
1 – 2	The student: i. use **limited** mathematical language ii. use **limited forms** of mathematical representation to present information iii. *(not demonstrated at this level)* iv. communicate through lines of reasoning that are **difficult to interpret** v. *(not demonstrated at this level)*.
3 – 4	The student: i. use **some appropriate** mathematical language ii. use **appropriate forms** of mathematical representation to present information **adequately** iii. *(not demonstrated at this level)* iv. communicate through lines of reasoning that are **complete** v. **adequately organize** information using a logical structure.
5 – 6	The student: i. **usually** use **appropriate** mathematical language ii. **usually** use **appropriate forms** of mathematical representation to present information **correctly** iii. **usually** move between different forms of mathematical representation iv. communicate through lines of reasoning that are **complete and coherent** v. **present** work that is **usually organized** using a logical structure.
7 – 8	The student: i. **consistently** use **appropriate** mathematical language ii. use **appropriate forms** of mathematical representation to **consistently** present information **correctly** iii. move **effectively** between different forms of mathematical representation iv. communicate through lines of reasoning that are **complete, coherent and concise** v. **present** work that is **consistently organized** using a logical structure.

Mathematics Assessment Criteria: Years 4 & 5

Criterion D: Applying mathematics in real-life contexts

Maximum: 8

Achievement level	Level descriptor
0	The student **does not** reach a standard described by any of the descriptors below.
1 – 2	The student: i. identify **some** of the elements of the authentic real-life situation ii. *(not demonstrated at this level)* iii. apply mathematical strategies to **find a solution** to the authentic real-life situation, **with limited success** iv. *(not demonstrated at this level)* v. *(not demonstrated at this level)*.
3 – 4	The student: i. identify the **relevant** elements of the authentic real-life situation ii. select, **with some success**, **adequate** mathematical strategies to model the authentic real-life situation iii. apply mathematical strategies to **reach a solution** to the authentic real-life situation iv. *(not demonstrated at this level)* v. **discuss** whether the solution makes sense in the context of the authentic real-life situation.
5 – 6	The student: i. identify the **relevant** elements of the authentic real-life situation ii. select **adequate** mathematical strategies to model the authentic real-life situation iii. apply the selected mathematical strategies to **reach a valid solution** to the authentic real-life situation iv. **explain** the degree of accuracy of the solution v. **explain** whether the solution makes sense in the context of the authentic real-life situation.
7 – 8	The student: i. identify the **relevant** elements of the authentic real-life situation ii. select **appropriate** mathematical strategies to model the authentic real-life situation iii. apply the selected mathematical strategies to **reach a correct solution** to the authentic real-life situation iv. **justify** the degree of accuracy of the solution v. **justify** whether the solution makes sense in the context of the authentic real-life situation.